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THE DIPTEROUS FAMILY HELOMYZIDÆ.

BY J. M. ALDRICH AND P. S. DARLINGTON.

(Plates III-IV.)

[NOTE.—This family of flies was taken up for study and revision by Mr. Darlington while a senior student in the University of Idaho. At the time of his graduation in June, 1907, he had nearly finished most of the genera, including the drawing up of descriptions of the species, new and old. At this time his appointment as horticultural inspector in an important field at Wenatchee, Wash., necessitated his immediate departure. As we had assumed obligations on all sides by borrowing material, there was no course open to me but to complete the work, which after some delay I have done. My part, aside from a general review, has been to work up the genera *Leria* and *Siligo*, and to prepare the illustrations. The new genus *Siligo* and its two species, and the new species of of *Leria* (*glauca*), should be credited to me; the other new genus, *Porsenus*, and the remaining new species, six in number, should be credited to Mr. Darlington, whose industry and keen discrimination left little for me to do as far as his time permitted him to go.—J. M. ALDRICH.]

This small family of Acalyptrate Muscidæ is readily distinguished by the following characters: wings with auxiliary vein and second basal cell distinct, and a row of spines along the costa; vibrissæ present; fronto-orbital bristles only one or two; all the tibiæ with preapical bristles.

Czerny, from a slightly different view point, defines the same group as follows: "The Helomyzidæ belong to that series of groups of Acalyptrate which possess convergent or crossed (also called decussate) postvertical bristles. They are distinguished from all the other groups of this series by the simultaneous occurrence of vibrissæ and an entirely separate auxiliary vein." The postvertical bristles are located on the back of the head, somewhat behind the ocelli, and are easily seen.

For practical purposes the costal spines are almost sufficient to distinguish the family, but these do occur in a few species outside the family, especially in *Cyrtonotum*, *Cænia* and *Fucellia*, of our fauna. *Cyrtonotum* (Pl. IV, figs. 8, 9) has a short first longitudinal vein, united towards the tip with the auxiliary; *Cænia* has the typical Ephydrid face, and the second basal cell united with the discal; while *Fucellia* has a row of fronto-orbital bristles extending to the base of the antennæ, some six in number.

The costal spines in *Heteromyza* are said to be very small, but there seems to be no good reason for regarding this as a North American genus, and we have not taken it into account.

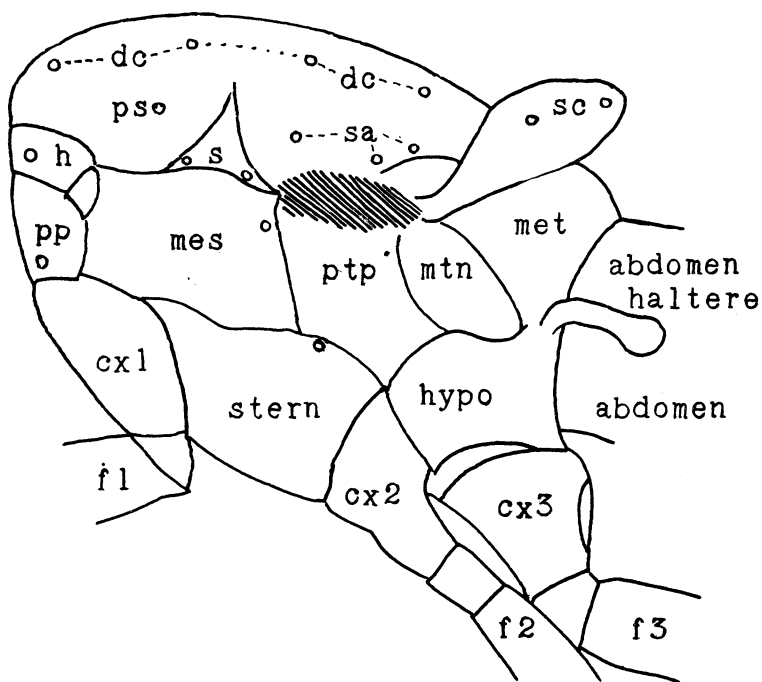
The larval habits are known in only a few cases in our fauna. Some of the species are found in caverns, where the larvæ are said to breed in the excrement of bats. The adults of others are found about the mouths of holes occupied by rodents; other species are adapted to life on sand dunes. The known habits are mentioned under the separate species.

The classic paper on the family is Loew's "Ueber die europäischen Helomyzidæ und die in Schlesien vorkommenden Arten derselben," published in the *Zeitschrift für Entomologie*, xiii, 1-80. The work bears the date 1859, but as determined by Osten Sacken and Czerny it must have been published in 1862 or early in 1863. There appear to be no names of about that period conflicting with Loew's, hence the exact date is not of great importance. Schiner's treatment of the family in *Fauna Austriaca*, Diptera, ii, 20-35, 1864, really antedates in its preparation the paper by Loew; hence it is practically superseded by the latter, especially in the matter of genera. The only other general work on the family is a recent one by Czerny, "Revision der Helomyziden," in *Wiener Entomologische Zeitung*, xxiii, 199-244 and 263-286, published in 1904. This includes the Helomyzinæ (only the genera *Helomyza* and *Allophyla*), being Part I of a work as yet unfinished. The descriptions of the American species are quoted; one useful feature of the work is a set of notes on Walker's types of Helomyzidæ, showing that none of the species belong to the family at all, unless it may be among the small number of which the types are now missing. Nearly all are Sapromyzas.

Loew based his classification mainly on characters derived from the bristles; hence this was the first family in which chaetotaxy was used, and that long before the introduction of the term.

The bristles which by their variability afford generic characters are first of all the dorso-centrals, which occur in all the numbers from one to five; the humeral and propleural (either one each or absent) are also useful. The figure on Plate III shows the position of the various parts and bristles of the thorax.

Important specific characters are found in the number of sternopleural bristles, the presence or absence of hair or bristles on the



EXPLANATION.

dc, dorsocentral bristles, four in a row.

h, humerus, with one bristle.

s, the widened lateral end of the transverse suture, which is obsolete in the middle of the dorsum; the two notopleural bristles are located so that the s is between them.

ps, the presutural bristles.

sa, the three supra-alar bristles.

sc, the scutellum with the two scutellar bristles, apical and lateral.

mes, mesoternum, with one mesosternal bristle at the posterior edge.

s, sternopleura, with one bristle at the upper edge.

pp, propleura, with one bristle on the lower part.

ptp, pteropleura.

mtan, metasternum.

hypo, hyposternum.

met, metanotum.

cx1, cx2, cx3, coxæ.

fl, f2, f3, femora.

The shaded area is the insertion of the wing.

mesopleura, the size of the second fronto-orbital, the pubescence of the scutellum, etc. The constancy of some of the most minute of these characters is interesting.

Our work is based primarily on the collections of the senior author, in which the types, unless otherwise mentioned, will be retained. Important additional material was received from Prof. A. L. Melander, Pullman, Wash.; C. T. Brues, Milwaukee, Wis.; C. W. Johnson, Boston, Mass.; Erich Daecke, Philadelphia, Pa.; and the United States National Museum. A few specimens came from Prof. R. A. Cooley, Bozeman, Montana; E. S. Tucker, Lawrence, Kansas; and C. F. Baker, now of Para, Brazil, but in California at the time of making these collections.

We have cited literature only when the same is not found in the 1905 Catalogue, except when changes of synonymy, etc., are involved. The rest may be found in the Catalogue.

A side view of the thorax of *Anorostoma maculata*, somewhat diagrammatic, to show the sclerites and bristles, the origin of the latter represented by small circles, is given on Plate III.

TABLE OF GENERA.

1. Thorax with long pile, dorsocentrals but little differentiated.

Leria helvola male.

Thorax with shorter pile, dorsocentrals well developed.....2.

2. One dorsocentral..... **Porseus** new gen.

Two dorsocentrals..... **Achaetomys** Coq.

Three dorsocentrals..... **Tephrochlamys** Loew.

Four dorsocentrals.....3.

Five dorsocentrals.....4.

3. Middle tibiae with spines on the outer side near the middle.

Ecothea Haliday.

Eyes very small, with vertical diameter less than the cheeks (Pl. IV, fig. 3).

Eccoptomera Loew.

Face very receding, convex in profile, without distinct oral margin (Pl. IV, fig. 4)..... **Anorostoma** Loew.

Without the above characters..... **Leria** Loew.

4. Humeral bristle absent..... **Helomyza** Fall.

Humeral bristle present.....5.

5. No bristle on mesopleura..... **Allophyla** Loew.

A bristle on posterior part of mesopleura..... **Siligo** new gen.

PORSEUS Darlington, n. gen.

Humeral and propleural bristles absent; only one dorsocentral (the hindmost); only one supra-alar (the foremost); presutural 1; notopleural 2; scutellar a very large apical pair and a small lateral

pair; prescutellar a small pair; fronto-orbital only one, very small; no sternopleural; one pteropleural.

Third joint of the antenna rounded, rather large, with long, bare arista; face receding, oral margin but little prominent, about as in *Anorostoma*.

Wing of ordinary *Helomyzid* form, costal spines distinct.

The name is from Porsena, one of the invaders of Rome; we change the ending to avoid the confusion of a masculine noun with a feminine ending. Accent on the first syllable.

The singular chætotaxy renders the species and genus easily recognizable, as there are half a dozen good generic characters. The head of the single type was accidentally destroyed after it had been drawn and some notes made, but a further examination in regard to the fronto-orbital bristles and the form of the oral margin would have given us a little greater certainty on these points.

Porsenus johnsoni Darlington, n. sp. (Pl. IV, fig. 2).

Length, 4.7 mm.; of wing, 5.7 mm.

General color ashy gray, with yellow legs.

Occiput gray; front brown; eyes rather large, round; orbits silvery; cheeks about three-fourths the width of the eyes, somewhat cream colored; first two joints of the antenna reddish, third cinereous, round, arista rather long, only microscopically pubescent; one rather long vibrissa on each side.

Dorsum of thorax gray, the lateral edges a little yellowish, median part with coarse and rather dense hairs; mesopleura bare, except for two or three coarse hairs on the front edge, just below the spiracle; sternopleura densely pubescent all over, with no bristle; pteropleura with one good-sized bristle and several coarse hairs.

Abdomen gray, the posterior margin of each segment somewhat reddish.

Wings with a faint brownish tinge, hind cross-vein slightly infuscated. The submarginal cell is rather noticeably widened in front of the anterior cross-vein.

Legs yellowish, with few bristles; femora indistinctly darker; tarsi moderately infuscated.

One female. Johnson: Boston, Mass., October 19th.

ACHÆTOMUS.

Coquillett, *Canad. Ent.*, xxxix, 75, March, 1907.

"Near *Helomyza*, as restricted by Loew, but with only two pairs of dorsocentral bristles, propleural present, two pairs of fronto-orbitals, etc. Eyes circular, cheeks nearly as wide as the eye-height, third joint of antennæ broader than long, arista dorsal, bare. Femora without bristles, tibiæ with apical and preapical bristles only. Venation as in *Helomyza*, spines of costa well-developed. Type, the following species:

"Achaetomus pilosus new species.—Reddish brown, the scutellum and legs yellow, bases of abdominal segments three to five dark brown, hairs and bristles black. Hairs of cheeks covering their lower half, no bristles near vibrissæ. Pleura almost wholly covered with hairs except the portion posterior to the sternopleura, one sternopleural bristle, no other pleural bristles present; scutellum without hairs, four scutellar bristles. Wings hyaline, unmarked except the extreme base and the stigma, which are yellowish. Length 8 mm.

"North Saugus, Mass. A male specimen collected by Mr. H. M. Russell. Type No. 10157, U. S. N. M." (Original description entire.)

Not represented in our material.

TEPHROCHLAMYS Loew.

Dorsocentral bristles 3, all behind the suture; humeral 1; propleural 1; notopleural 2; supra-alar 3; scutellar 2 pairs; prescutellar 1 pair, moderately large; presutural 1; fronto-orbital 2. Third antennal joint a very little elongated, arista bare. Face moderately receding. Cheeks about half the width of the eye, with one or two bristles in the middle, at the end of the row of hairs descending behind the eye. Wings rather elongate and narrow, with small spines.

In Becker's part of the Katalog der Paläarktischen Dipteren, iv, 51, the name is spelled Tephrochlamis; there appears to be no etymological reason why the original spelling with a y should not be retained.

TABLE OF SPECIES.

Scutellum wholly yellow **flavitarsis** n. sp.
Scutellum mostly or wholly black in ground color..... **rufiventris** Meigen.

Tephrochlamys flavitarsis Darlington, n. sp.

Length 6 mm.; of wing 5.6 mm.

Cheeks yellow; legs entirely yellow; wings brownish; scutellum entirely yellow.

Head brownish-yellow, occiput brown; front yellowish-brown; antennæ reddish-brown, third joint large, round; arista brown, bare; vibrissæ one on each side, of medium length; also one bristle on the middle of each cheek.

Dorsum of the thorax gray on the middle part, somewhat reddish-gray on the lateral edges; two brown stripes run lengthwise between the dorso-central bristles; dorsum densely pubescent, except the lateral edges; scutellum entirely lemon-yellow, bare except the ordinary four bristles. Propleura and mesopleura brownish, bare except the one propleural bristle; sternopleura reddish-gray, with one strong bristle and a row of smaller hair on the upper edge.

Abdomen yellow, first segment gray.

Wings with a brownish tinge; spines of the costa very short.

Legs entirely yellow.

One female specimen, U. S. N. M., labelled "White Mts., Morrison."

***Tephrochlamys rufiventris* Meigen.**

Length 5.5 mm.; of wing 6.2 mm.

Gray; abdomen reddish-yellow; cheeks whitish.

Occiput ash-gray, front saffron-yellow to brownish, pubescent; orbits of the eyes somewhat silvery-gray; antennæ reddish-brown, the third joint nearly black, arista of medium length, bare; eyes rather large, round; cheeks about three-fourths the width of the eye, somewhat cream color; vibrissæ rather delicate, one on each side; at the middle of the hind edge of the bare part of the cheek is a smallish bristle.

Thorax entirely ash-gray; dorsum pubescent, except the lateral edges; the small hairs arise from small black dots, while the three pairs of dorso-central bristles arise from large black spots; scutellum gray, yellowish at the apex, bare except the ordinary four bristles.

Propleura bare, except the one strong bristle above the fore coxa; mesopleura bare, except one small hair on the lower anterior corner; on the upper edge of the sternopleura is one strong bristle and a row of smaller hairs.

Abdomen reddish-yellow; the hypopygium of the male small; terminal segments in the female tapering, slender.

Wings hyaline except the stigma, which is brownish-yellow; veins dark brown, spines of the costa rather short.

Legs yellow, all the tarsi somewhat blackish, the outer side of the front femur somewhat infuscated; middle femur slender; hind femur rather stout; pulvilli inconspicuous.

Six males and thirty-two females. Johnson, St. John's County, Quebec, June 5th; Boston, Mass., July 7th. U. S. N. M., Franconia, N. H. Daecke, Orange Mountains, N. J., July. Melander, Berkeley, Cal., March 26th; St. Johns, Quebec, September 23rd; Pullman, Wash., March 9th. Aldrich, Friday Harbor, Wash., May 28th; Moscow, Idaho, all seasons.

This species is very common at Moscow, Idaho, and can be found on windows at almost any time during the year.

Becker, Katalog, iv, 51, adopts Meigen's name *canescens*, published in his Systematische Beschreibung, vi, 57, in preference to this, which was published on the following page. As there is no question that the two names refer to the same species, the only point at issue between the two is whether the strict observance of page precedence justifies the changing of a name that is in general use. In this case we are in entire accord with the rules of the International Congress in deciding against change.

ECOTHEA Haliday.

Dorsocentral bristles 4 (3 behind the suture); humeral 1; notopleural 2; presutural 1; propleural 1; supra-alar 3; scutellar 2 pairs, the apical divergent; prescutellar 0 or minute; fronto-orbital 1; on the middle tibia near the middle one on the hind side and several on the front. Head rather flattened in front, short in fore and aft measurement; eyes smallish, round; cheeks about half or three-fifths as wide as the eye. Front very wide. Antennæ rather large, third joint not quite round, with long, thin, bare arista. Oral margin prominent. No bristle on cheek. Scutellum elongate. Wings of the usual form, costal spines strong, the hind apical angle of the discal cell generally acute.

The spines on the middle part of the middle tibia are the chief mark of generic distinction; they occur in no other genus of *Helomyzidæ*.

We have but one species.

Ecothea fenestralis Fallen.

Blepharoptera specus Aldrich, 21st Rept. Geol. Ind., 1896, 189.

Length 4.5 mm.; of wing, the same.

General color brown, legs and feet yellow.

Front brown above, yellowish toward the antennæ, with rather coarse black hairs all over; face light yellow, the distinct antennal grooves darker, a single strong vibrissa on each side; palpi yellow; antennæ dark brown.

Thorax brown on the dorsum, the humeri, entire scutellum, and edges of notum yellow; scutellum with coarse hairs on its dorsal surface; pleuræ largely yellow, the mesopleura and sternopleura darker; mesopleura bare, sternopleura with one bristle and scattered hairs; pteropleura bare; halteres yellow.

Abdomen darker brown, narrowly whitish on the hind edges of the segments, sixth segment and beyond yellow.

Legs wholly yellow, including coxæ and tips of tarsi.

Wings yellowish, veins yellow, cross-veins darker but not distinctly bordered.

The specimen described is perhaps a little lighter in color than the average; there is considerable variation in the intensity and extent of the brown. The tarsi are sometimes infuscated toward the apex, and the scutellum is not always yellow at the base, etc.

Twelve specimens, both sexes. Aldrich: Brookings, S. Dakota; Porter and Wyandotte Caves, Indiana. Johnson: Brookline, Mass. U. S. N. M.: Algonquin, Ill.

The Indiana cave specimens are cotypes of *Blepharoptera specus* Aldrich. Blatchley adds a note to the original description as follows: "The species of *Blepharoptera* were the largest and most

common Diptera noted in the caves. They were found in the damper portions of nearly every cave visited, on the walls and roof. They were never noted on the wing, except when disturbed, when they would fly but a short distance before alighting." This refers to *defessa*, *pubescens* and *latens*, as well as the above species.

ECCOPTOMERA Loew.

This genus, not hitherto reported from North America, but represented in Europe by some nine species, is separated from *Leria* primarily by the smallness of the eyes; the figure of our new species illustrates this character.

Chætotaxy: one humeral, one propleural, one fronto-orbital, four dorsocentral, no prescutellar, four scutellar, one presutural, two notopleural, three supra-alar. The middle femur has an irregular row of rather striking bristles on the front side (in our species). Arista always very long and thin. Antennæ small, far apart, with small grooves below them, which are widely separated on the face. Posterior cross vein forming an acute angle with the fifth vein behind, but standing about at a right angle with the longitudinal axis of the wing.

Eccoptomera americana Darlington, n. sp. (Pl. IV, fig. 3).

Length 6.7 mm.; of wing 6.7 mm.

Yellow, including all the tarsal and antennal joints; abdomen more or less blackish.

Head yellow, two dark brown stripes running from the base of the occiput to the vertex; a tuft of small hairs parted in the middle at the base of the occiput; front somewhat saffron yellow, very slightly pubescent; antennæ saffron yellow, the distal end of the second joint bordered with brown; third joint scarcely equaling in length the two preceding taken together, not infuscated; arista long and slender, not pubescent; cheeks straw color, about one and one-fourth times the width of the eye; one strong vibrissa on each side, rather far apart.

Thorax yellow; dorsum with very short and inconspicuous pubescence; dorsocentral bristles large and prominent; scutellum yellow, with sparse pubescence besides the usual four bristles; mesopleura bare except three or four very small hairs on the lower anterior corner; sternopleura with one strong bristle and one smaller hair on the upper edge, sparsely pubescent below.

Abdomen varying from yellow to blackish-yellow; the second, third and fourth segments usually with a blackish posterior border; hypopygium yellow, of medium size.

Legs entirely yellow; pubescence very short and inconspicuous; the front femora armed with two rows of strong bristles, one on the upper edge and one on the lower; hind femora armed with some irregularly placed bristles.

Three males, Moscow and Craig's Mt., Idaho (Aldrich).

ANOROSTOMA Loew.

A humeral and a propleural bristle; three supra-alar; one pre-sutural; two notopleural; one large and one small mesopleural bristle; four dorsocentral bristles; two fronto-orbital bristles. Eyes transversely ovate; cheeks broad; face receding, the front edge of the mouth entirely obliterated (*i. e.* the lower part of the face is not set off from the oral cavity by a sharp margin). The sixth longitudinal vein extends to the margin of the wing. The distinct mesopleural bristle seems to be a valuable generic character.

TABLE OF SPECIES.

1. With only one sternopleural bristle... ..2.
With three or four sternopleural bristles... ..**grandis** n. sp.
2. Wing with a black spot covering both cross-veins... ..**opaca** Coq.
Cross-veins with separate spots... ..3.
3. Thorax black in ground color, with gray dust... ..**maculata** n. sp.
Thorax yellow in ground color, with yellowish dust... ..**marginata** Lw.

Anorostoma grandis Darlington, n. sp.

Length 7.3 mm.; of wing, the same.

Large, blackish species, pulvilli long and conspicuous (in the male); hind femora exceptionally stout.

Occiput and front brownish; a black stripe extends from the ocellar bristles to the occiput; front densely pubescent below; cheeks straw yellow, about the width of the eye; eyes transversely oval; antennæ brownish, third joint oval; arista short, bare; face strongly receding below; vibrissæ one on each side, close together, rather delicate.

Thorax light brown; dorsum rather densely sprinkled with dark brown dots from which the small hairs arise, and with larger dark brown spots from which the bristles arise; scutellum reddish-brown, bare except the ordinary four bristles; besides the one propleural bristle a propleural hair; two bristles and a hair on the posterior margin of the mesopleura, which is otherwise bare; on the upper edge of the sternopleura is a row of from three to four strong bristles (three on one side; on the other four, two of which are a little smaller); sternopleura pubescent below.

Abdomen black, hypopygium yellow, globose.

Wings almost hyaline; the end of the auxiliary vein and the small and large cross-veins infuscated; the cloud on the small cross-vein is preceded and followed by whitish areas, and there is another of these on the costa beyond the end of the auxiliary, also a few faint ones in the base of the wing.

Legs yellow; front femora infuscated, middle femora comparatively slender, hind ones exceptionally stout; the last with a black spot near the distal end; all the pulvilli long and conspicuous, dirty white in color.

One male specimen. Aldrich: Pacific Grove, Cal., May 9th; collected in a wet meadow in the woods near the seashore about a mile south of Pt. Pinos Light.

Anorostoma opaca Coquillett.

"Head yellow, opaque, white pruinose, the front and upper part of the occiput tinged with bluish gray, a velvet-black spot between the antennæ and each eye, antennæ brownish, the arista marked before the middle with a white ring, palpi yellow, proboscis brown; body brown, opaque, bluish-gray pruinose, mesonotum with four, the pleuræ with one brownish pruinose vittæ; sternopleura bearing numerous short bristly hairs and with two stout bristles; legs yellow, opaque grayish pruinose, except a polished spot at base of the posterior side of the first two pairs and a streak on the posterior side of the hind ones; wings whitish, marked with large pale gray spots and with a black cloud covering the small and hind cross-veins, a small black spot beneath apex of auxiliary vein, one slightly before middle of antepenultimate section of the fourth vein, and several smaller spots on some of the other veins; the gray color fills the whole marginal cell beyond apex of auxiliary vein, nearly the entire second half of the submarginal, etc.; length 7 mm. A female specimen captured by the writer.

"*Habitat*.—Los Angeles County, Cal.

"*Type*.—Cat. No. 5500, U. S. N. M." Original description.

This species is not represented in the material examined. From its resemblance to *maculata*, it is probably a sand dune form, although nothing has been reported about its habits.

Anorostoma maculata Darlington, n. sp. (Pl. IV, figs. 4 and 5).

Length 4.5 mm.; of wing, the same.

General color gray, wings spotted, cheeks cream colored.

Occiput, vertex and front gray; lower part of the front somewhat yellowish and pubescent; the two pairs of vertical and three pairs of fronto-orbital bristles arise from brown spots; a rather broad brown stripe extends from the ocellar bristles to the base of the occiput; antennæ brown, third joint oval, arista white for about one-third its length at the proximal end; cheeks about one and a half times the width of the eye; eyes transversely ovate; a black spot connects the base of the antenna with the anterior somewhat angular margin of the eye; vibrissæ rather small.

Thorax gray; dorsum ash-gray; the dorsocentral bristles arise from large, distinct brown spots and the small hairs arise from small brown dots; the humeri, the lateral edges of the thorax, and the pleuræ, have a reddish-gray tinge; scutellum gray, bare except the ordinary four bristles, which arise from large brown spots, the apical pair confluent; the mesopleura has one large and one small bristle on the posterior edge, otherwise bare; the sternopleura with one strong bristle on the upper edge and with rather long, somewhat scattering pubescence below.

Abdomen gray, the small hairs arising from brown dots; hypopygium of the male gray, globose, and sparsely covered with very short pubescence.

Wings whitish, with large brown blotches; there is a blackish spot on the auxiliary vein at its tip, one on the small cross-vein, and a small one on the anterior end of the hind cross-vein, forming a straight row; the posterior end of the hind cross-vein also a little infuscated.

Legs pale yellow, except the femora, which are gray.

Twenty-one males and eleven females. Aldrich: Pacific Grove, Cal., May 9th.

This species is common on the sand dunes south of Point Pinos Light, on Monterey peninsula. It flies close down to the sand, resembling in its movements the drifting sand grains; when it alights, its mottled color blends perfectly with the sand. No information was gathered as to its food habits or its larval stages.

Anorostoma marginata Loew.

Length 5.4 mm.; of wing, 5.2 mm.

Head yellow; occiput clay-yellow, with a rather wide black stripe running up the middle to the vertex; front a little darker yellow, rather densely pubescent below; antennæ small, testaceous, third joint roundish, arista noticeably enlarged at base; face strongly receding below; face and cheeks straw-yellow; one vibrissa on each side of medium size.

Thorax yellow, varying to brownish, dorsum pubescent all over; the bristles arising from dots; scutellum yellow, bare except the ordinary bristles; mesopleura with one strong bristle and two smaller ones on the posterior edge, and a few small hairs on the lower anterior corner; sternopleura with one large and one smaller bristle on the upper edge, besides pubescence and strong bristles below.

Abdomen varying from yellow to brown; hypopygium of the male large, yellowish.

Wings yellowish; the cross-veins and the end of the auxiliary vein strongly infuscated, forming a straight line of three dots running diagonally across the wing.

Legs entirely straw-yellow, pulvilli of about the same color.

Fourteen males and twelve females. Daecke: Lucaston, New Jersey, May 30th; Brown's Mills, New Jersey, June 21st; Manumuskin, New Jersey, May 10th. Melander: New Bedford, Massachusetts, June 12th; Colorado. U. S. N. M.: Oswego, New York, July 1st (labeled *Anorostoma carolinensis* Desv.); Colorado. Cooley: East Flathead, Montana, July 25th. Johnson: Manumuskin, New Jersey, May 10th. Tucker: Tabernash, Colorado, August.

LERIA Desvoidy.

This genus includes all the members of the family having four dorsocentrals, except those three small groups which offer additional generic characters distinctly their own (*Æcothea*, with spines on the middle of the middle tibiæ; *Eccoptomera*, with very small eyes, and *Anorostoma*, with peculiar face and oral margin); thus *Leria* is a residual genus, not homogeneous, yet difficult to divide by satisfactory characters. The genus *Scoliocentra*, founded by

Loew to include forms with woolly hair and curved apical spurs on the middle tibiæ, we consider not sufficiently distinct, and allow it to lapse as a synonym, in part, of *Leria*. The characters apply mostly to the males, only with difficulty to the females, and there are intermediate forms. Loew himself states that *Leria iners* has curved spurs, and in Centuries, iii, 51 he mentions his own *Leria spectabilis* as a *Scoliocentra*.

Among other generic characters, the eyes are generally round, the antennæ short, with a round third joint, arista bare, either long or short; one humeral bristle; one propleural; two small prescutellar; scutellar bare, with the usual two pairs of bristles.

Leria specus Aldrich is a synonym of *Æcothea fenestralis*, as we find from an explanation of cotypes.

Leria carolinensis Desv. is insufficiently described, and we fail to identify it, but give a translation of the original description.

Leria tibialis, *geniculata* and *humeralis*, all described originally by Zetterstedt in northern Europe, are reported from Greenland by Lundbeck and part by earlier entomologists. The species, however, seem to be badly confused, as in Katalog der Paläarktischen Dipteren, iv, 47, 48, Becker disposes of them as follows: *tibialis* he makes a synonym of *serrata*, *humeralis* of *inscripta* Meig. (European), while *geniculata* is in part a synonym of *serrata*, and in part of *inscripta* Meig., another European species. This tangle should evidently be unraveled by European entomologists; for the present it is hardly worth while for us to quote the descriptions, as they all read much alike.

The remaining *Lerias* of the 1905 Catalogue are included in the following table, with the addition of *helvola* and *fraterna*, formerly referred to *Scoliocentra*, and of *glauca* new species, and *crassipes*, described as European. Specimens of all the species tabulated have been examined by us except *tristis* and *lutea*; of these we translate the original descriptions.

TABLE OF SPECIES.

- | | |
|--|------------------------------|
| 1. Mesopleura hairy at least on the lower and hind part | 2. |
| Mesopleura bare, at most with a few hairs close to the propleural bristle.... | 4. |
| 2. Mesopleura entirely hairy in the male, in the female the upper hind corner bare | fraterna Loew. |
| Mesopleura hairy only on the lower and hind part..... | 3. |
| 3. Abdomen black, hind margins of the segments reddish. . | pubescens Loew. |
| Abdomen black, not banded | defessa Osten Sacken. |

4. Two or more sternopleural bristles.....5.
Only one sternopleural bristle.....6.
5. Color pale yellow.....**biseta** Loew.
Color black or brown.....**iners** Meigen.
6. Pteropleura with one bristle and several hairs (halfway between the sternopleural bristle and the root of the wing).....**pectinata** Loew.
Pteropleura bare.....7.
7. Thoracic dorsum yellow in ground color.....8.
Thoracic dorsum black in ground color, or mainly so.....10.
8. Large species (10 mm.), yellow, the abdominal segments sharply banded with black behind.....**helvola** Loew.
Small species (4 to 5 mm.), abdomen not so marked.....9.
9. Scutellum flat.....**lutea** Loew.
Scutellum convex.....**discolor** Loew.
10. Abdomen wholly dark yellow, contrasting with the thorax.....**serrata** Linn.
Abdomen not wholly yellow.....11.
11. Femora and tibiæ wholly yellow.....12.
Femora and tibiæ partly blackish.....13.
12. With one vibrissa.....**tristis** Loew.
With two vibrissæ, the hind metatarsus of the male shortened.....**latens** Aldrich.
13. Hind femora of the male with a comb of nine truncate black bristles below near the middle.....**cineraria** Loew.
Hind femora not so marked.....14.
14. Humeri yellow.....15.
Humeri not yellow.....**crassipes** Loew.
15. Arista short, not over twice as long as the body of the antenna.....**leucostoma** Loew.
Arista considerably longer.....**glauca** n. sp.

Leria fraterna Loew.

Scoliocentra fraterna Loew, Centuries, iii, 51.

Leria fraterna Coquillett, Wash. Acad. Sci., ii, 457.

Chocolate-brown, with a slight glaucous coating and a dense covering of fine black hair on body and legs.

Head yellow, occiput and ocellar triangle brown, with a whitish pruinosity; front with numerous fine black hairs, extending down on the sides below the base of the antennæ; anterior fronto-orbital more than half as long as the posterior; cheeks fully half the height of the eyes, bairy on the lower half; palpi yellow; one vibrissa; antennæ reddish-brown, short, the arista of moderate length, thin, black.

Thorax chocolate-brown, with a whitish pruinosity, everywhere covered with soft, woolly black hair, except on the scutellum, metanotum, metasternum and posterior half of the pteropleura; all the bristles except the scutellar are more slender than usual, the anterior three dorso-centrals and the humeral almost imperceptible; the position of the dorso-central row on each side is marked by a faint, interrupted brown line; scutellum bare, yellowish-brown; halteres yellow; one sternopleural bristle.

Abdomen reddish-brown, with some irregular brown markings above, the last segment and hypopygium more yellow; very hairy, like the thorax; hypopygium small, turned forward under the preceding segment.

Legs brown, with the same woolly hair; preapical bristles of fore and hind tibiae very slender; middle tibia with a stouter preapical bristle and a cluster of about five apical ones, of different sizes, the two or three largest distinctly curved; tarsi gradually infuscated, with large, whitish pulvilli.

Wings with a faint brownish cast, the veins near the base, and the subcostal cell yellowish; costal setae of medium size.

Length 8 mm.; of wing, the same.

Female.—A little lighter in color, the hair everywhere shorter, and the bristles better developed, about as strong as in the average of the family.

Three females and two males. Aldrich: Moscow, Idaho, and St. Anthony Park, Minnesota. Johnson: Montreal, Canada, June 20th. U. S. N. M.: Ungava Bay, Hudson Bay Territory, L. M. Turner, Nos. 280 and 4186.

This is evidently a wide spread northern form; the type locality is Sitka, and it has been reported from White Mountains, New Hampshire.

***Leria pubescens* Loew.**

Length of body 7.3 mm.; of wing, 8.1 mm.

Head, including the occiput, yellow; front entirely yellow, rather densely pubescent; vertical bristles rather long and stout; antennae yellow, first two joints reddish-yellow; arista long and slender, only microscopically pubescent; vibrissae one on each side, rather long and stout; cheeks straw-yellow, about three-fifths the width of the eye.

Dorsum of the thorax cinereous; the humeri and the lateral edges of the dorsum somewhat reddish; a rather distinct median brown line runs almost the length of the thorax; the dorso-central bristles arise from brown spots, which are almost confluent; the dorsum rather densely pubescent; scutellum reddish-yellow, bare except the ordinary four bristles; mesopleura reddish-brown, rather sparsely pubescent; besides one strong bristle, the sternopleura has rather dense and fairly long pubescence.

Abdomen brownish, densely covered with long, black pile; the posterior edge of each segment reddish-yellow; hypopygium of the male of medium size, yellow.

Wings with a brownish tinge; cross-veins very slightly infuscated; all the veins distinctly brown.

Legs reddish-yellow, densely pubescent all over; a rather long, brown spot at the apical end of the front tibia; last three tarsal joints of the front legs, the last two of the middle legs, and all those of the hind legs black.

One male, one female. Brues: Horseshoe Cave, Door County, Wisconsin, July 13th.

This species was reported from caves in Indiana; see note by Blatchley under *Æcothea fenestralis*.

Leria defessa Osten Sacken.

Length 5.5 mm.; of wing 6.2 mm.

Head yellowish; occiput brownish pollinose; front pale yellow, wholly pubescent; foremost fronto-orbital bristle about half the size of the posterior one; antennæ reddish-brown, third joint roundish, rather large; arista only microscopically pubescent; face receding; cheeks one-half the width of the eye; vibrissæ one on each side, rather strong.

Dorsum of thorax grayish-brown; the dorso-central bristles arise from large brown spots and the small hairs from smaller spots; a middle brown line runs almost the whole length of the thorax; humeri yellow; pleura rather dirty yellow; mesopleura rather sparsely pubescent; sternopleura, besides the one strong bristle, densely pubescent all over; scutellum bare except the ordinary four bristles, yellow.

Abdomen gray; halteres yellow; hypopygium of the male of medium size, yellow.

Wings with a brownish yellow tinge.

Legs yellow; front femora somewhat infuscated.

Four males and nine females. Melander: Indiana. U. S. N. M.: Cheat Mt. Cave, Files Creek, West Virginia; Boone's Cave, Hickman's Landing, Kentucky. Johnson: Niagara Falls, New York, June 28th.

This species was first described from a cave in Kentucky, and has been reported from other caves in Kentucky and Indiana. See note by Blatchley under *Ectothea fenestralis*.

Leria biseta Loew.

Length 5.7 mm.; of wing, 6.4 mm.

Yellow, abdomen somewhat infuscated; in general appearance resembles the genus *Helomyza*.

Head yellow, front lemon-yellow, lower part pubescent; antennæ reddish-yellow, third joint round, arista rather long, only microscopically pubescent; cheeks straw yellow, about three-fourths the width of the eyes, which are round, occiput entirely yellow, a tuft of small black hairs parted in the middle at the base of the occiput.

Thorax yellow, the dorso-pleural suture reddish, dorsum rather densely pubescent; scutellum lemon-yellow, bare except the ordinary four bristles; mesopleura bare except a few very small hairs on the anterior edge; sternopleura with two strong bristles of nearly equal size on the upper edge, also with sparse pubescence.

Abdomen blackish-yellow; the second, third and fourth segments with a black posterior margin; hypopygium of the male bright yellow, rather large and densely pubescent.

Wings large, with a brownish-yellow tinge; the hind cross-vein and the apices of the longitudinal veins distinctly bordered with brown; spines of the costa yellow.

Legs yellow, densely covered with black hairs; distal end of the hind femur black; the last four tarsal joints of the front legs black; pulvilli white, rather conspicuous.

One male specimen. Johnson: St. Johnsbury, Vt., June 26th.

This species was described from European material; it has since been reported from Sitka, and White Mountains, New Hampshire.

***Leria iners* Meigen.**

Length of body 7 mm.; of wing 7 mm.

General color black; legs yellow, infuscated; hypopygium yellow; wings brown veined.

Front brown, pubescent; the occiput and a narrow area running forward, including the vertical triangle, black; cheeks yellowish-brown, about three-fourths the width of the eye; antennæ brown, third joint oval, the arista missing in the described specimen; vibrissæ one on each side, long.

Dorsum of the thorax grayish-black, covered with a yellowish pollen, densely pubescent all over, the small hairs arising from small black dots; scutellum same color as the thorax, entirely bare; pleuræ grayish-black; spiracle on the propleural suture conspicuous; a bunch of small black hairs on the mesopleura just above the front coxa, mesopleura otherwise bare.

Abdomen black, rather densely covered with long black hairs; hypopygium yellow.

Wings slightly brownish; wing veins distinctly brown; spines of the costa exceptionally long and sharp.

The outside of all the femora black except the ends, which are yellow; all the tibiæ and tarsi yellow; front tarsi flattened and widened from about the end of the second joint; spurs of the middle tibiæ curved.

One male. Aldrich: Moscow, Idaho.

A European species hitherto reported from North America but once, without locality.

***Leria pectinata* Loew.**

Length of body 4.7 mm.; of wing 4.4 mm.

Head yellow; front somewhat saffron-yellow, pubescent; orbits of the eyes whitish; the occiput, a portion of the vertex surrounding the fronto-orbital bristles and the vertical triangle black; antennæ reddish-yellow, third joint brownish or brownish-black; arista long and slender, bare; cheeks about three-fourths the width of the eyes, somewhat clay-yellow; vibrissæ rather strong.

Dorsum of the thorax cinereous, rather densely covered with black pubescence; pleuræ entirely gray; propleura with three or four hairs besides the one strong bristle over the fore coxa; mesopleura entirely bare; pteropleura with a distinct bristle and several hairs (this seems to be one of the best marks of distinction); sternopleura covered with dense pubescence, and with one bristle; scutellum bare, yellowish.

Abdomen cinereous, the posterior margins of the segments usually yellowish, sometimes entirely cinereous; hypopygium of the male also yellowish.

Wings somewhat brownish, veins entirely brown.

Legs testaceous; front femora somewhat infuscated; tarsi brownish; the front metatarsus in the male with an enlarged lower apical margin, quite distinct when seen from the proper angle.

Seventeen females and four males. Aldrich: Brookings, South Dakota, June 11th; Moscow, Idaho. Melander: Austin, Texas, November 16-19th. U. S. N. M.: Mesilla Park, New Mexico, February 18th. C. F. Baker: Pine Lake, California.

The species was originally described from Texas; it has been reported from "upper burrows of desert rodents" in Arizona. Professor Melander informs me that he collected it at Austin, Texas, in a novel manner: he buried wide mouthed bottles up to the neck in ant hills, left them over night, and on approaching next morning slipped a cork in before the flies had time to be disturbed.

Leria helvola Loew.

Scoliocentra helvola Loew, Centuries, ii, 80.

Male.—Yellow, the largest of the family, with large yellow wings.

Head yellow, the lower half deeper yellow, sharply limited above; face receding, oral margin not very distinct, one strong vibrissa; cheeks one-third the height of the eye; antenna short, yellow, with long, thin arista.

Thorax yellow, bristles fairly well developed, dorsum with rather dense black hair; pleurae bare except the sternopleura, which is covered with fine, black hair and has one bristle; scutellum bare, lighter yellow than the rest of the dorsum, with the usual bristles; halteres yellow.

Abdomen yellow, with dense black hair, hind margins of the segments narrowly blackish (less distinct than in the female); hypopygium small and inflected; halteres yellow.

Legs yellow, including all the tarsi; preapical bristles slender on front and hind tibiae; middle tibiae with stouter ones, and a cluster of several apical ones, the larger ones distinctly curved; front tibiae with a row of bristles above and one below; hind tibiae with a short row above near the apex: pulvilli rather large, whitish.

Wings large, yellow, the posterior cross-vein and the tips of the three veins in the apex margined with brown; a distinctly yellower tinge accompanies all the veins, last section of fifth vein only one-third as long as the posterior cross-vein; costal setae strong.

Length 8.5 mm.; of wing 9.5 mm.

Female.—Paler yellow, less hairy, bristles larger, distinct narrow black borders behind on the second, third, fourth and fifth abdominal segments.

One male, five females. Aldrich: a pair from Ithaca, New York, June 5 and July 6, 1897, which were originally in the collection of Cornell University. Daecke: Orange Mountains, New Jersey, August, a female collected by Weidt. U. S. N. M.: White Mountains, New Hampshire. Johnson: North Mountain, Pennsylvania, August 28, 1897, and Elkhart, Indiana.

Originally described from Illinois, but the distribution is rather eastern.

Leria discolor Loew.

Length of body 5.4 mm.; of wing 4.6 mm.

General color yellow; abdomen somewhat darker.

Head yellow; front saffron-yellow, wholly pubescent; antennæ same color, third joint round; arista noticeably enlarged at base, the base yellow, remainder black, only microscopically pubescent; cheeks about one-half the width of the round eyes, straw yellow; vibrissæ one on each side, rather large and strong; orbits of the eyes somewhat silvery pollinose.

Thorax yellow; dorsum densely pubescent with black hairs; scutellum bright yellow, bare except the ordinary four bristles; mesopleura yellow, bare except three or four small hairs at the lower anterior corner; sternopleura with one strong bristle and about five small hairs on the upper edge, also numerous hairs on the lower part.

Abdomen yellowish-brown; hypopygium of the male yellow, of medium size.

Wings unspotted, almost hyaline; wing veins yellow; spines of the costa rather small.

Legs yellow; tarsi somewhat darker; pulvilli dirty white, rather conspicuous.

One male and three females, from the type locality. U. S. N. M.: Mt. Washington and White Mountains, New Hampshire.

Leria serrata Linn.

Length 5.3 mm.; of wing 5.9 mm.

Head yellow, occiput black; front saffron-yellow above, lighter below, densely pubescent; first two joints of the antennæ yellowish-brown; third joint black, arista long, only microscopically pubescent; cheeks yellow, three-fourths the width of the eye; more than one vibrissæ on each side.

Thorax ash-gray, densely pubescent; a narrow brown stripe runs down the middle, with a wider one on each side, from which the dorso-central bristles arise; scutellum ash-gray, bare except the ordinary four bristles; mesopleuræ bare except a few small hairs at the lower anterior corner; sternopleura, besides the one strong bristle, with rather dense pubescence.

Abdomen wholly reddish-yellow or saffron-yellow, hypopygium of the male of the same color, small.

Wings grayish translucent, veins yellowish-brown.

Legs yellow; front femora infuscated on the outside; last three or four tarsal joints of all the legs blackish.

Nine males and nine females. Cooley: Bozeman, Montana, May 27th to July 7th. Melander: Mayfield Cave, Bloomington, Indiana. Brues: Horseshoe Cave, Door County, Wisconsin, July 13th. Aldrich: Moscow, Idaho.

The preceding species is very similar in appearance to *Tephrochlamys rufiventris*; it can be distinguished by having four dorso-central bristles, shorter antennæ and more bristly epistoma.

The earliest described species of the family; common in many parts of Europe as well as North America; frequently collected in caves, also on windows of houses. According to Brauer, the larvæ have been bred from fungi and from hen manure.

Leria latens Aldrich.

Brownish-black, the head, knees, venter and tip of abdomen reddish; two vibrissæ on each side.

Length 4.8 mm.; of wing 5 mm.

Front saffron-yellow; occiput, a narrow stripe including the fronto-orbital bristles, and a broader area including the vertical triangle, black; first two antennal joints reddish-yellow, third joint black, arista long, only microscopically pubescent; cheeks yellow, about three-fourths the width of the eye; two strong vibrissæ on each side, the front one somewhat the longer.

Thorax black, dorsum rather densely pubescent; scutellum black, bare except the ordinary four bristles, which are rather unusually long; mesopleura black, bare; sternopleura with a row of four or five unequal bristles on the upper edge, pubescent below.

Abdomen black; the venter and the posterior border of each segment and all the fifth segment reddish-yellow in the female; hypopygium of the male yellow, of medium size.

Wings grayish, almost hyaline, unspotted; veins brown; spines of the costa rather small and inconspicuous.

Coxæ and femora black, hairy, the latter stout; trochanters and knees red; tibiæ usually with considerable red or reddish-yellow color, especially near the middle; tarsi almost uniformly brown.

Three males and three females. Aldrich (cotypes): Porter's Cave, Indiana, July 14th. Milwaukee Public Museum: Horseshoe Cave, Door County, Wisconsin, July 13th. Melander: Austin, Texas, January 20th.

See note by Blatchley under *Æcothea fenestralis*.

Leria cineraria Loew.

Length of body 6.2 mm.; of wing 7.7 mm.

Ash-gray; a comb of about nine strong, blunt bristles on the hind femora of the male.

Head yellowish; occiput gray, the gray portion extending forward on the edges so as to include the fronto-orbital bristles, and in the middle so as to include the vertical triangle; front from saffron-yellow above to lemon-yellow below, rather densely pubescent; eyes round, about twice the width of the cheeks; antennæ brown, first two joints yellowish-brown; arista long, nearly bare; vibrissæ long and rather stout.

Thorax ash-gray; dorsum pubescent, the small hairs arising from distinct brown dots, the bristles arising from larger brown spots; upper surface of the scutellum gray, but yellowish on the margins, bare except the ordinary four bristles; mesopleuræ bare except three or four hairs on the lower anterior corner, just above the front coxa; sternopleuræ with one strong bristle and four or five smaller hairs on the upper edge, besides numerous hairs on the lower part.

Abdomen gray, hypopygium of the male yellow, medium sized; in the female the last two segments are reddish-yellow and the ventral side of the abdomen is reddish-brown.

Wings hyaline except the subcostal cell.

Legs pale yellow, tarsi brownish; hind femora of male with a comb of about nine strong, blunt, black bristles on the inner or hind side.

Two males and three females. Aldrich: Moscow, Idaho, June 7th.

NOTE.—Our specimens agree with Loew's description in every particular, except that he says that the dorsum of the thorax is unspotted, while in all of these it is distinctly spotted.

Leria crassipes Loew.

Loew, Zeitsch. f. Ent. xiii, 68 (*Blepharoptera*).—Germany.

Male.—Rather small, dark grayish, the large hypopygium and the legs testaceous, the coxæ and the chest between them with very dense pile. Length 5–5.2 mm.; of wing 5.2–5.3 mm.

Blackish-gray. Front somewhat narrower than in most of the other species. Occiput and vertex blackish-gray. The anterior of the two fronto-orbital bristles rather strong. Antennæ reddish-yellow or yellow, the third joint sometimes brown on a great part of its outer side; arista rather short, with pubescence somewhat more noticeable than in other species. Eyes large, rounded; cheeks of only moderate breadth; vibrissæ one on each side, long. Thorax with quite dense and rough hair; an extremely small dot at the base of each hair; between the dorso-central rows of bristles are two faint brownish-black lines, generally much abbreviated in front; on each side are two spots of the same color, still fainter, one before and one behind the suture, the latter one larger. Scutellum concolorous with thorax. Pleuræ more pure cinereous than the dorsum, sometimes somewhat brownish; only one sternopleural bristle, but the row of hairs in front of it are somewhat strong and bristle-like, so that one or two of them may approach the size of bristles; mesopleura bare; between the middle and hind coxæ with dense and stout bristles. Abdomen blackish cinereous, the hind margins of the segments often brownish-red or almost testaceous. Hypopygium brown-yellowish or more red-yellowish, large and thick, with sparse hair. Legs brownish-yellow, densely hairy; tarsi infuscated; femora very strong, the front ones with many bristles; on the underside of all the femora are only the usual hairs, but very dense. Wings with a perceptible tinge, more gray-brown than yellow-brown; subcostal cell narrow; bristles of the costa numerous.

The preceding is a translation of the entire original description. We have two female specimens, sent us under this name from the United States National Museum, from Ungava Bay, Hudson's Bay Territory, Nos. 4116 and 4186, collector L. M. Turner. The description applies very well, only as these are females the pilosity is not so strong as described, especially on and between the coxæ; the row of hairs on the sternopleura, while rather large, do not approach the stature of bristles. The specimens having been in alcohol, it is impossible to say much about the lines and dots of the thorax. The species was described from Europe, and this is the first published reference to its occurrence in North America.

Leria leucostoma Loew.

Length of body 3.7 mm.; of wing 4.4 mm.

Vertex and occiput gray; front saffron-yellow; antennæ brownish yellow, third joint round, arista black, only microscopically pubescent; orbits of the eyes whitish; face somewhat cream colored, cheeks about one-third the width of the eye; eyes round; vibrissæ one on each side, rather strong.

Dorsum of the thorax ashy gray, rather densely pubescent; dorso-central bristles rather slender; humeri conspicuously reddish-yellow; propleuræ reddish-yellow; mesopleuræ gray except the margins, which are yellow, bare; sternopleuræ yellowish, one strong bristle and four or five hairs on the upper edge; scutellum yellow, bare except the ordinary four bristles.

Abdomen from yellow to brown, each segment with a silvery posterior margin; hypopygium yellow, of medium size.

Wings entirely hyaline; spines of the costa small.

Legs yellow; all the tarsi and the distal end of the tibiæ brown.

Three male specimens. Johnson: Hampton, New Hampshire, May 25th and September 12th. Aldrich: Mt. Constitution, Washington, July 7th. U. S. N. M.: White Mountains, Morrison.

Leria glauca Aldrich, n. sp.

Length 6.1 mm.; of wing 7.5 mm.

Occiput, vertical triangle and thorax, except apical part of scutellum, of a smooth glaucous gray color, much as in *Tephrochlamys rufiventris* and *Leria serrata*. Remainder of head reddish-yellow, third joint of antenna infuscated, the arista long and slender. Cheek fully half the width of the eye. A single vibrissa, the hairs behind it small.

Bristles of the thoracic dorsum long, the intervening hairs fine and short; the bristles are seated on blackish dots; a slender median brown line on the dorsum, abbreviated at both ends; scutellum yellowish on the apical part, flat and bare, with the usual four bristles; pleuræ concolorous with dorsum, mesopleura and pteropleura bare, except a few hairs on the former in its lower front corner; sternopleura with one bristle and covered with fine hairs, which become larger below. Halteres yellow.

Abdomen dark yellow in ground color, but considerably blackened above except near the apex; hind margins of the segments lighter except the first.

Legs including coxæ yellow, the tarsi darker toward the tip; claws and pulvilli large; hind metatarsus with two bristles below near the base.

Wings hyaline, long and wide.

A single female, Pullman, Washington, April 16, 1904, from Professor Melander.

The species has a marked resemblance to *serrata*, but the abdomen is considerably black above, the hairs in the vicinity of the vibrissa are small; the anterior fronto-orbital bristle is very small, while in *serrata* it is nearly as large as the one behind.

Leria lutea Loew.

"Male and female. Wholly ochraceous, opaque, tarsi brownish toward the apex, arista only slightly pubescent, one strong vibrissa on each side, mesopleura bare, scutellum bare except the usual bristles; all the femora stout; hypopygium of the male small; wings a little cinereous, spines of the costa minute.

"Related to *Leria inscripta* and *crassipes*. Entirely ochraceous, opaque. Antennæ concolorous, first two joints very short, third rather large, round, with a slender, almost bare blackish arista. Eyes roundish. Cheeks rather broad. One stout vibrissa on each side. Mesopleura bare; one sternopleural bristle. Segments of the abdomen subequal, the middle ones sometimes brown or black, except the hind edges. Hypopygium of the male small, concolorous. Coxæ and mesosternum with black pile. Legs ochraceous, the femora stout, tarsi brownish toward the apex. Wings yellowish subhyaline, brown toward the apex and hind border, spines of the costa small. (Sitka; Sahlberg)." Entire description translated.

This species we are unable to recognize in our material; the reference to *inscripta* raises the suspicion that the *geniculata* from Greenland may be this species, and this may really be identical with *inscripta*. On this we have no evidence.

Mr. Fyles has reported *lutea* from Quebec.

Leria tristis Loew, Centuries, ii, 84.

Female.—Small, blackish-gray, head yellow, antennæ brownish-black, seta short, nearly bare; legs black; wings grayish hyaline, spines of the costa sparse and small. Length $3\frac{1}{2}$ mm.; of wing $3\frac{1}{2}$ mm.

Blackish-gray. Head yellow, occiput and vertex blackish-gray. Antennæ brownish-black, first two joints brown, third round, arista short, nearly bare. Eyes rather large, round; cheeks rather small; face receding below, vibrissæ rather small. Pleuræ and scutellum bare except the ordinary bristles. Legs entirely black. Halteres pale yellowish. Wings ashy hyaline, the stigma very pale brownish; veins blackish, spines of the costa scattered and small. (Winnipeg; Kennicott.) Translation of entire description.

This species is not among those we have examined. It has, however, been seen from the Commander Islands, Alaska, by Coquillett, and is also reported from New Jersey by Johnson in Smith's Catalogue of the Insects of New Jersey.

Scatophaga carolinensis Desvoidy, Myodaires, 629.

(Referred to *Leria* in Ann. Soc. Ent. France, 1841, 258.)

"Nigro-subcinerea; facie alba; frontalibus rubris; pedibus fulvis, alæ subflavescentes."

Length 8 mm. This species, lacking the antennæ, may belong to a different section, but it shows most of the characters of a *Scatophaga*.

"All the body brownish-black, with a very light cinereous covering; face white; frontalia fulvous, broad anteriorly; legs yellow, with a little dark brown on the femora; wings with a light yellowish tinge, markings little developed.

"This species, coming from Carolina, was given me by M. Bosc under the name *Musca flavescens*."

Entire description translated into English except the diagnosis. We are unable to identify the species with certainty or plausibility from the vague characterization. Perhaps it was really a *Scatophaga*, as the redness of the front would indicate.

A pair of specimens from the U. S. N. M., locality Oswego, New York, came to us under this name, while others, not specifically distinct, from Colorado were labeled *Anorostoma marginata*, we think correctly.

HELOMYZA Fallen.

Humeral bristle absent; propleural absent; five dorso-centrals; three supra-alar; two notopleural; one presutural; scutellar two pairs; one fronto-orbital; one sternopleural. Face with distinctly projecting oral margin; antennæ with somewhat elongated third antennal joint, the arista in most cases more or less plumose. Wings large, in the majority of cases with markings, which usually border the cross-veins and the apices of the longitudinal veins.

In this genus the transverse suture of the thorax runs obliquely forward from its origin at the side, so that the portion behind it is larger than usual; four of the five sternopleural bristles are behind the suture.

The species are as a rule rather large, yellow, somewhat elongate forms, easily distinguished by the absence of humeral and propleural bristles, together with the large number of five dorso-centrals.

We have seen all the species of the table except the Mexican forms and *apicalis*; the descriptions of these, together with those of Walker's two supposed species, are reproduced at the end of the genus.

TABLE OF SPECIES.

- | | |
|--|---------------------------------|
| 1. Arista plumose | 2. |
| Arista bare or merely pubescent | 7. |
| 2. Mesopleura bare | 3. |
| Mesopleura with hairs | 6. |
| 3. Cheeks more than one-third the eye height | 4. |
| Cheeks less than one-third the eye height | 5. |
| 4. Scutellum pilose | longipennis Loew. |
| Scutellum with only a very few scattering hairs | plumata Loew. |
| 5. Scutellum bare | limbata Thomson. |
| Scutellum pilose | quinquepunctata Say. |
| 6. Ocellar knob black, face with narrow silver-white lateral margins (Mexico). | |
| | punctulata Van der Wulp. |
| Ocellar knob not black, and no silver-white margins of face. | |
| | nemorum Meigen. |

7. Blackish spots of different sizes in all the cells of the wing (Mexico).

polystigma Van der Wulp.

A rounded dot between the second and third veins (Mexico).

distigma Van der Wulp.

A black spot on each side of the ocellar spot (Mexico).... **iniens** Giglio-Tos.

Without the above characters.....8.

8. Wings entirely hyaline **zetterstedti** Loew.

The transverse veins and apices of longitudinals distinctly infuscated.....9.

9. Scutellum except the sides bare **apicalis** Loew.

Scutellum pilose **barberi** n. sp.

Helomyza longipennis Loew.

Length 8.1 mm.; of wing, the same.

Large, rather pale yellow to reddish-yellow species, marked with a blackish triangle on each of abdominal segments two to five; this triangle as wide as the segment and occupying all its posterior part, the apex of the triangle pointing cephalad and indistinctly approaching the next preceding segment.

Head bright yellow, front wide, with one fronto-orbital on each side; antennæ short, the third joint a little elongated; arista with short but dense plumosity; face and cheeks pale yellow; vibrissæ small; cheeks hardly half as high as the eye.

Dorsum of thorax testaceous, not dotted; scutellum flat, pilose above; mesopleura bare; sternopleura with one strong bristle, and a few delicate yellow hairs, the lower part with longer mostly yellow hairs.

Abdomen lighter yellow, marked with black as indicated above; hypopygium small, yellow; venter in the male with long yellow hair.

Legs yellow, femora in the male stout, all with a row of spines on the outer side, and abundant, long yellow hair on the lower part; last two joints of the tarsus black.

Wings yellowish, large and broad, the cross-veins and tips of longitudinals with only a trace of infuscation, strongest on the hind cross-vein.

Three males and one female. Johnson: St. Johnsbury, Vermont, June 27th; Delaware Water Gap, New Jersey, July 11th; North Mountain, Pennsylvania, August 28th. Daecke: Bloomfield, New Jersey, September (Weidt).

The type locality was New York, and the species had been reported from New Jersey by Johnson in Smith's Catalogue.

Helomyza plumata Loew.

Length 4.6-5.2 mm.; of wing 5.9 mm.

General color pale yellow; legs somewhat lighter colored; five brown spots on the wing.

Head yellow; eyes medium sized, roundish; front saffron-yellow, lower part densely pubescent; antennæ same color or slightly darker, third joint oval; arista rather long, plumose; cheeks about half as wide as the eyes, paler than the front; vibrissæ rather small.

Dorsum of thorax saffron-yellow; besides the ordinary bristles it is densely pubescent all over, the small hairs arising from small brown dots; humeri lighter in color; mesopleura pale yellow, entirely bare; sternopleura pale yellow, with several small hairs besides the one strong bristle; scutellum thinly hairy and with the usual four bristles.

Wings slightly yellowish; small and large cross-veins and the apices of the longitudinal veins distinctly bordered with brown.

Abdomen yellow, each segment with a blackish posterior border; hypopygium of male large, brighter yellow.

Legs light yellow.

Eight male and seven female specimens. Aldrich: Knoxville, Tennessee (Summers); Battle Creek, Michigan; South Dakota, July 2nd. U. S. N. M.: Oswego, New York; Milwaukee County, Wisconsin, July 15th. Johnson: Philadelphia, Penna.; Delaware Water Gap, New Jersey; Montreal Island, Quebec; Auburndale, Mass.; Burlington, Vermont, and Ft. Collins, Colorado; dates from June 25th to August 14th. Melander: Wisconsin (Wheeler); Angora, Penna., September 17th.

The type locality was New York.

***Helomyza limbata* Thomson (Pl. IV, fig. 6).**

Length 5.3 mm.; of wing 6.2 mm.

General color pale yellow; legs a little lighter; wings strongly infuscated.

Head yellow; eye large, round; vertex and upper part of the front saffron-yellow, lower part of the front lighter yellow, densely pubescent; ocellar triangle also pubescent; antennæ pale yellow, third joint oval; arista of moderate length, plumose; vibrissæ of medium size, one on each side; cheeks narrow.

Thorax entirely pale yellow, dorsum densely pubescent; mesopleura bare; sternopleura with one strong bristle and numerous small black hairs; scutellum saffron-yellow, bare except the ordinary four bristles and an occasional small hair near the margin.

Wings with the marginal and usually the first submarginal cell distinctly infuscated, also the ends of all the longitudinal veins; both cross-veins distinctly bordered with brown.

Abdomen of the female nearly black, that of the male not nearly so dark, but with a black band on the posterior edge of each segment; hypopygium of the male large, yellow.

Legs straw-yellow; hind knees blackish.

Five male and nine female specimens. Aldrich: San Mateo, Palo Alto and San José, California, January 26th to April 12th; Orcas Island, Guemes Island, and Keyport, Washington, July 7th to August 7th.

Type locality, California.

***Helomyza quinquepunctata* Say.**

Helomyza latericia Loew, Centuries, ii, 89.

Length 5.7–6 mm.; of wing 6 mm.

General color yellow, the large and small cross-veins and the apices of the longitudinal veins distinctly bordered with brown; scutellum entirely pilose; eyes large, ovate.

Front saffron-yellow, broader at the vertex than at the antennæ; face lighter yellow, broadening from the antennæ down; antennæ yellow, third joint large,

oblong-ovate, with plumose arista; cheeks narrow, pale yellow; vibrissæ one on each side, of medium size. At the base of the occiput is a tuft of black hair parted in the middle.

Dorsum of thorax with numerous small brown spots, out of which arise the small hairs; ground color saffron-yellow; mesopleura entirely bare, somewhat paler yellow; sternopleura with one strong bristle and numerous small hairs below; scutellum the same color as the thorax, wholly pilose.

Wings slightly brownish, the front and hind cross-veins and the apices of the longitudinal veins distinctly bordered with brown.

Abdomen yellow, the hind margin of each segment black; hypopygium of the male rather small.

Legs straw-yellow, the last three tarsal joints of all the legs black; preapical bristles of the tibiæ long and slender.

Four female and one male specimens. Aldrich: Battle Creek, Michigan. U. S. N. M.: Southern Georgia. Johnson: Opelousas, Louisiana, March to May (Hough).

Type locality, Connecticut; it has also been reported from the White Mountains of New Hampshire by Mrs. Slosson.

This species was redescribed by Loew as *H. latericia*, but in a note appended to the description he says he should have identified it with *quinquepunctata* had not Say asserted the antennæ of the latter to be five-spotted. This was a mistake on the part of Loew, since Say said nothing of the kind, but located the spots on the wing.

(In my Catalogue I made Loew's *plumata*, instead of *latericia*, a synonym of *quinquepunctata*; this I am now satisfied was due to some confusion of names, as *latericia* is clearly the synonym.—J. M. A.)

Helomyza nemorum Meigen, Syst. Besch., vi, 52.—Europe. Loew, Zeitsch. f. Ent. Bresl., xiii, 22. Schiner, Fauna Austr., ii, 28. Czerny, Wien. Ent. Zeit., xxiii, 223.—Europe and North America.

Helomyza assimilis Loew, Centuries, ii, 87.—Hudson's Bay Territory.

Length 5.9 mm.; of wing 6.4 mm.

General color yellow; small and large cross-veins, and the apices of the longitudinal veins distinctly bordered with brown; mesopleura pubescent.

Head yellow; front saffron-yellow, lower part pubescent; antennæ saffron-yellow, third joint rather large, oval; arista long, plumose; eyes roundish, about two and a half times the width of the cheeks; cheeks straw-yellow.

Dorsum of the thorax densely pubescent, the small hairs arising from small brown dots; ground color saffron-yellow; mesopleura with numerous small black hairs; sternopleura besides one strong bristle with numerous small black hairs; pleura yellow; scutellum saffron-yellow, wholly pilose.

Wings slightly brownish; the costal and subcostal cells strongly infuscated; the cross-veins and the apices of the longitudinal veins distinctly bordered with brown; spines of the costa rather long.

Abdomen yellowish, but more or less infuscated; hypopygium yellow, rather large.

Legs straw-yellow; fore femora stout; last three joints of all the tarsi black.

Four male and three female specimens. C. F. Baker: Ormsby County, Nevada, July 6th. Aldrich: San Juan Island, Washington, May 31st; Juliaetta, Idaho, July 9th; Moscow, Idaho; Craig's Mt., Idaho; Colorado (E. S. Tucker).

Loew did not identify *nemorum* from North America, but named our species *assimilis*, stating that it did not differ from *nemorum*, except in having a little shorter plumosity of the arista and general paler color; Czerny identified his American material as *nemorum*, and did not identify *assimilis*, merely quoting the description (*op. cit.*, p. 222). From these facts I feel safe in making *assimilis* a synonym of *nemorum*.

***Helomyza zetterstedti* Loew.**

Length of body 5.6 mm.; of wing 6.9 mm.

General color yellow; wings hyaline.

Front leather-yellow, lower part pubescent; eyes medium size, round; cheeks straw-yellow, about two-fifths the width of the eye; antennæ yellow, third joint rather large, somewhat infuscated, oval; arista rather long, not plumose, but merely pubescent; vibrissæ of medium size; at the base of the occiput is a bunch of small black hairs.

Thorax yellow; dorsum clay-yellow, rather sparsely pubescent; the small hairs not arising from dots; mesopleuræ clay-yellow, bare; besides one strong bristle a few scattering small hairs on the sternopleuræ; scutellum yellow, bare.

Wings entirely hyaline.

Abdomen blackish yellow, hypopygium of the male bright yellow, rather large.

Legs yellow, femora lemon-yellow, tibiæ and all but the last two joints of the tarsi straw-yellow, last two tarsal joints black, inner side of hind and middle femora glabrous, at the apex of the femur is a black spot on the inner side.

Fifteen female and eight male specimens. Aldrich: Mt. Constitution, Washington, July 7th; Friday Harbor, Washington, May 29th. U. S. N. M.: Popoff Island, Alaska, July 8th.

***Helomyza barberi* n. sp.**

Length 5.8 mm.; of wing 6.3-7 mm.

General color brown, wings brownish, a brown ring or spot at each end of the hind tibia and at the distal end of the front tibia.

Head yellowish; front ochre-yellow except a brownish strip running down from the vertex on each side including the fronto-orbital bristles, and a wider brown area in the middle including the ocellar triangle; all the yellow portion of the front pubescent, a strip of small black hairs extending from the ocellar bristles to the vertical bristles; antennæ yellowish-brown, third joint oval, arista long and slender, only microscopically pubescent.

Dorsum of the thorax yellowish-brown, wholly pubescent, the small hairs arising from small brown dots, the bristles arising from larger brown spots; in

the darker specimens a central brown stripe runs the full length of the thorax; scutellum pubescent, except a bare strip in the middle; pleuræ clay-yellow; mesopleura with numerous strong hairs; sternopleura besides the one strong bristle with numerous small hairs.

Wings brownish; costa, small and large cross-veins, and apices of the longitudinal veins distinctly bordered with brown.

Abdomen yellowish cinereous or totally cinereous; hypopygium of the male brownish-yellow, rather small.

Legs yellow, somewhat infuscated; all the tibiæ with a brown band at the distal end, and the hind tibiæ with an additional one near the base, these rings when feebly developed sometimes appearing as spots on the outer side; last two joints of the tarsi black; pulvilli white and rather conspicuous.

Three females, one male. U. S. N. M.: Las Vegas, N. M., Aug. 13th and 14th (H. S. Barber), labeled *Helomyza tinctoria* Walk. Aldrich: Custer, So. Dakota. Cooley: Missoula, Montana, May 28th.

The type is a male from Las Vegas, and will be returned to the National Museum.

SPECIES NOT IDENTIFIED.

***Helomyza apicalis* Loew.**

"Yellow, the transverse veins and the apices of the longitudinal ones distinctly bordered with brown, upper half of the pleura [mesopleura] with some scattered minute pile, antennal arista with short pubescence.

"Yellow, opaque, the color of the thorax and scutellum verging more into lateritious. Front brighter yellow. Antennæ almost fulvous, the third joint ovate, arista with short pubescence. Eyes rather large, roundish; the cheeks of medium width; one vibrissa on each side, of medium size. Dorsum of the thorax sprinkled with very minute brown dots, the bristles of the median part surrounded at base with brownish dots a little larger. Scutellum bare except at the sides. Pleura with a faint stripe, the upper half bearing some minute pile. Hind margin of each abdominal segment bordered with blackish. Legs lutescent, the apices of the hind femora and bases of all the tarsi brownish, apices of the tibiæ brown, tarsi black at tip. Wings cinereous-hyaline, transverse veins and apices of the longitudinal ones distinctly bordered with brown, costal bristles of medium size.—(District Columbia; Osten Sacken)."

Translation of original description.

***Helomyza tinctoria* Walker. Female.**

"Body ferrugineous, clothed with short, black hairs; head and chest beset with a few black bristles; head with a hoary tinge behind; sides of the face without bristles; epistoma not prominent; eyes pitchy; facets small; sucker pitchy, clothed with tawny hairs; palpi tawny, beset with black bristles; feelers tawny at base; abdomen linear, pitchy, a little narrower and very much longer than the chest, tawny at the base, tapering toward the tip, which is also tawny; legs pale ferrugineous, clothed with short black hairs; tips of the shanks beset with black bristles; claws black, ferrugineous at the base; foot-cushions pale tawny; wings gray, tawny for some breadth beneath the fore border and among the veins in the disk; wing-ribs and veins tawny; longitudinal veins straight;

middle cross-vein straight, upright; lower cross-vein straight, very slightly oblique, parted by more than twice its length from the middle cross-vein, by thrice its length from the end of the fourth longitudinal vein, and by near half its length from the end of the fifth longitudinal vein; poisers tawny; scales yellow, very small.

"Length of the body $3\frac{3}{4}$ lines; of the wings $6\frac{1}{2}$ lines.

"Nova Scotia. From Lieut. Redman's collection."

***Helomyza fasciata* Walker.**

"Body clothed with black hairs and bristles; head gray, adorned with white reflections on each side of the crown and on the fore part, which is tawny; sides of the face without bristles; epistoma not prominent; eyes red, convex; all the facets very small; sucker black, clothed with tawny hairs; feelers black, nearly as long as the face; third joint slightly conical, rather deep, rounded at the tip, very much longer than the second joint; first and second joints dark ferrugineous; bristle bare, rather stout at the base, more than twice the length of the third joint; chest and breast gray; chest with a tawny tinge; shoulders ferrugineous, breast more hoary; abdomen tawny, shining, spindle-shaped, a little longer than the chest, slender at the tip; sutures of the segments black; legs tawny, clothed with black hairs and bristles; feet black, tawny at the base; foot-cushions very small; wings pale gray, with a very slight tawny tinge; wing-ribs pale tawny; veins pitchy, pale tawny toward the base; lower cross-vein parted by much less than twice its length from the middle cross-vein, having two very indistinct curves, the lower outward, the upper inward; scales very small, whitish, with pale yellow borders; poisers tawny.

"Length of body 2 lines, wings 4 lines.

"Nova Scotia. Lieut. Redman's collection."

The two descriptions immediately preceding, by Walker, need not give the student much trouble. They are inserted merely for completeness, and to satisfy any curiosity which might arise, but not with the expectation that they will be identified. In fact, one would almost certainly go wrong in identifying a species under either name, no matter how well the description fit. Czerny (*op. cit.*, pp. 202-205) has reported the results of his examination of Walker's types of *Helomyzidae*; out of 36 cases examined, there was *not one* that even belongs in this family, the types being mostly *Sapromyzidae*, with an admixture of *Trypetidae*, *Anthomyidae*, etc. However, he does not say anything about *tineta*, and reports *fasciata* lacking in the Museum. Hence we have not even the satisfaction of positively excluding them from the family.

Two specimens of *barberi* were received from the U. S. National Museum under the name *tineta* Walker, but it is probable that the name was applied before Czerny published his results; at any rate we do not accept it.

Helomyza iniens Giglio-Tos.

"Yellowish-testaceous; the face pale yellow, third antennal joint almost circular, black at base and on the upper margin; arista long, plumose; thorax ochraceous, dotted with brown; pleura pale yellow; scutellum ochraceous, with two brown vittæ and four bristles; abdominal segments bordered with brown behind; legs in the male stout and hairy; bases and apices of the tibiæ annulate with black; tarsi black at apex; wings yellowish, costa with spinules, the front margin, transverse veins and apex of the fourth longitudinal vein brown. Length 9 mm."

Translation of original description. The type locality was simply Mexico. In his later description Giglio-Tos adds that there is a black spot each side of the ocellar spot; plumosity of the arista medium; pleura with a brownish stripe; all the femora with an apical brown spot above; hind tibiæ with a black ring near the base; apices of all the tibiæ and last four joints of all the tarsi black.

Van der Wulp, in his *Biologia* reference, calls attention to a few points. The most striking character is the infuscation upon the hind cross-vein, which extends both ways along the fourth vein, so as to make a T-shaped mark. The original description does not correctly describe the apex of the wing; it is infuscated to the tip of the fourth vein. Van der Wulp had numerous specimens from Guerrero, a State of Southern Mexico.

Helomyza punctulata Van der Wulp.

"Testaceous; head and legs rufous; front and face with black dots; wings blackish at the costa and tip.

"Length 5 mm.

"Front broader than the eyes, orange-rufous; face, cheeks and occiput pale rufous; ocellar knob black; two black dots near the vertex next the eyes and two smaller ones between the eyes and the root of the antennæ; three similar points on the face—one in the middle and two on the sides of the oral margin, these latter bearing the vibrissæ; face with a narrow silver-white lateral margin; on the occiput is a central black spot, on each side with a white border. Antennæ rufous; third joint ovate; arista black, distinctly plumose. Proboscis pale rufous; palpi black, at least at the tip. Thorax and scutellum reddish testaceous; thoracic dorsum with more or less distinct brown stripes; a blackish band from the shoulders to below the base of the wings; pleuræ and metanotum pale rufous; thorax laterally with several bristles; scutellum with four bristles. Abdomen rufous, the segments with blackish hind borders and marginal bristles. Legs pale rufous, the tarsi towards the end and the tip of the hind femora blackish; femora and tibiæ with weak bristles. Halteres rufous. Wings with short spines along the costa; from the end of the first vein the costa has a blackish border, which becomes broader outwards and extends round the tip of the wing; the cross-veins are covered by blackish spots; venation as in the preceding species [*iniens*].

"Habitat. Mexico, Omilteme in Guerrero, 8000 ft. (H. H. Smith)."

Helomyza distigma Van der Wulp.

"Rufo-testaceous; antennæ and legs rufous; two rounded spots in the first posterior cell, in addition to the other blackish markings on the wings.

"Length 5-7 mm.

"*Male*.—Head pale rufous; front much broader than the eyes; ocellar point shining brown, emitting two bristles, which are curved forward; exterior to these are two other bristles, and on each side of the vertex a pair of post-vertical bristles; face and cheeks broad; two weak vibrissæ at the oral margin. Antennæ rufous, short; third joint rounded; arista black, nearly bare. Proboscis and palpi rufous. Thorax and scutellum testaceous; thoracic dorsum with numerous hair-points; pleuræ with a brown stripe from the shoulders to beneath the base of the wings; the sides of the thorax with some bristles; scutellum with four bristles—one on each side and two at the hind margin; metanotum rufous. Abdomen grayish-brown, the anal segment globular and more rufous; the segments with some marginal and lateral bristles. Legs rufous, tips of the tibiæ, and the last three joints of the tarsi blackish; hind tibiæ with an indistinct brown ring near the base; femora rather robust, hairy beneath, the first and third pairs each with a row of bristles on the upper side; tibiæ with a preapical bristle. Halteres pale rufous. Wings grayish, with a row of short costal bristles, and with a blackish costal border, covering the mediastinal cell and from there extending to the tip of the wing, where it becomes narrower, to the end of the fourth vein; the cross-veins bordered with black; a spot on the fourth vein beyond the posterior cross-vein, a rounded dot between the second and third veins, just above the small cross-vein, and two similar spots between the third and fourth veins. Small cross-vein a little beyond the end of the first vein and beyond the middle of the discal cell; posterior cross-vein straight and slightly oblique.

"*Female*.—Differs from the male in having the abdomen pointed towards the apex, the arista shortly plumose, and the legs more slender and less hairy; the femora have a brown spot on the upper side near the tip, and the tibiæ dark rings near the base; the markings of the wings are similar, only the blackish dot between the second and third veins is wanting.

"*Hab.* Mexico, Amula, 6000 ft.; Xucumanatlan, 7000 ft.; and Sierra de las Aguas Escondidas, 9500 ft., all in Guerrero (H. H. Smith)."

Helomyza polystigma Van der Wulp.

"Testaceous; a blackish stripe on the pleuræ; wings with a blackish border to the costa and to the cross-veins, and numerous spots in all the cells. Length 4.5 mm.

"Allied to the preceding species [*distigma*], but smaller and differing from it in the markings of the wings. Face, cheeks, and anterior portion of the front yellowish, with a white reflection; front posteriorly rufous, with some brown points; frontal bristles as in *H. distigma*; a black spot on each side between the orbits and the root of the antennæ. Antennæ rufous; third joint rounded, blackish on the upper side; arista with very short hairs. Proboscis rufous (the palpi inconspicuous in the specimens examined). Thorax and scutellum brownish testaceous, the shoulders yellowish, beneath them on the partly cinereous pleuræ a blackish stripe; scutellum with four bristles. Abdomen brown, the segments with narrow black borders. Femora blackish; tibiæ rufous, with black

tips; first joint of the tarsi rufous, the following joints blackish; tibiæ with a preapical bristle. Halteres yellow. Wings grayish; a black border along the costa, around the tip and on the cross-veins, and blackish spots of different sizes in all the cells; the costa with a row of short bristles; small cross-vein nearly under the end of the first vein, and on the middle of the discal cell.

"Hab. Mexico, Sierra de las Aguas Escondidas in Guerrero, 9500 ft. (H. H. Smith).

"Two female specimens."

ALLOPHYL Loew.

One fronto-orbital bristle; five dorso-central, arranged as in *Helomyza*; one humeral; one propleural; one presutural; two notopleural; no prescutellar; two pairs scutellar; three supra alar; one sternopleural; no mesopleural.

Head as in *Helomyza*, third antennal joint a little elongated, arista pubescent.

The main distinction between this genus and *Helomyza* is in the absence of the humeral bristle in the latter.

Only one North American species has been brought to light.

Allophyla lævis Loew.

Length 4.7 mm.; of wing 5 mm.

Yellow, antennæ of the same color or a little darker, third joint infuscated in the female; arista pilose.

Head yellow; front saffron-yellow, with very delicate pubescence, eyes rather large (about twice the width of the cheeks), round; cheeks straw-yellow; vibrissæ very delicate.

Thorax varying from saffron to straw-yellow, densely pubescent; scutellum bare except the ordinary four bristles; mesopleura bare; sternopleura rather sparsely pubescent, with one strong bristle.

Abdomen yellow, more or less infuscated, hypopygium of the male small.

Wings almost hyaline, unspotted, except a little infuscation around the hind cross-vein.

Legs straw-yellow, last tarsal joint black.

Two males and six females. Johnson: Montpelier, Vermont, June 25th; St. Johnsbury, Vermont, June 27th; Mt. Greylock, Massachusetts, June 15th; Castle Rock, Pennsylvania, June 16th. U. S. N. M.: White Mountains, New Hampshire, Morrison. Aldrich: Guemes Island, Washington, July 13th; Mt. Constitution, Orcas Island, Washington, July 7th.

SILIGO Aldrich, n. gen.

(Latin, *siligo* a very pale kind of wheat; feminine, accent on second syllable.)

One humeral bristle; one propleural; two notopleural; five dorso-

central; one presutural; three supra-alar; two scutellar (pairs); one mesosternal; two fronto orbital; two sternopleural; no prescutellar.

Head rounded, eyes round; antennæ short, third joint slightly elongated, with short, bare arista; face moderately receding, epistoma ascending between the small vibrissæ, with a distinct edge. Thorax with sparse and coarse hairs, besides the bristles. Wings with first vein short, and the auxiliary pale and thin, difficult to perceive, yet ending separate from the first vein.

Type.—*Oregona*.

On account of the comparative shortness and indistinctness of the auxiliary vein, it may be thought that *Siligo* is not a true Helomyzid genus; after comparing it with numerous genera in Sapromyzidæ, Geomyzidæ, etc., we are satisfied that its nearest relationships are here. It is very unlike *Curtonotum*.

While the course of the suture over the middle of the dorsum is not very apparent, either in this or *Helomyza*, the indications are that in *Helomyza* there is only one bristle before the suture, while here there are two, and only three behind.

TABLE OF SPECIES.

Bristles all yellow.....	oregona n. sp.
Bristles all black	litorea n. sp.

Siligo oregona Aldrich, n. sp., Pl. IV, figs. 1, 7.

Length 2.8 mm.; of wing, the same.

Yellow. All the hairs and bristles yellow, except the spines of the costa, which are black.

Head entirely yellow; eyes of medium size, round; antennæ yellow; arista of medium size, only microscopically pubescent; ocellar bristles very long; cheeks somewhat inflated, about the width of the eye.

Thorax entirely straw yellow, dorsum sparsely pubescent; scutellum entirely yellow, bare except the ordinary four bristles; mesopleura bare except one large and two small yellow bristles at the upper posterior corner; propleura bare except the one propleural bristle; sternopleura besides the two long bristles on the upper edge with rather sparse pubescence.

Abdomen grayish-yellow, hypopygium of the male small and inconspicuous, but armed with a slender black filament turning back.

Wings hyaline, veins yellow; spines of the costa black, rather long and prominent.

Legs entirely straw-yellow; a row of rather strong bristles on the under side of the fore femur; tarsal claws black except at base.

Three males, two females. Aldrich: Hood River, Oregon, July.

The head in *oregona* is more produced downward than in *litorea*, but the difference is almost wholly in the cheeks; in *oregona* the epistoma extends upward between the vibrissæ farther than in *litorea*.

Siligo litorea Aldrich, n. sp.

Length 1.9 mm.; of wing, about the same.

Ground color of body black, bristles all black.

Head yellow, the occiput, vertex and middle of face black; epistoma bordered with a narrow black line, which expands upward between the vibrissal ridges; vibrissæ of moderate size; antennæ yellow, the third joint considerably infuscated and slightly elongate; arista short, black, a little thickened at base; front yellow, the sides narrowly cinereous and the vertex black in color, which does not extend forward in a sharp angle as usual; two large fronto-orbital bristles—but the posterior one missing on one side in the described specimen, seemingly an abnormality. Eyes roundish, slightly angulated above, the cheeks over one-third as high as the eyes. Palpi rather brownish-yellow.

Thorax cinereous, with black ground color, the pleuræ, scutellum and metanotum concolorous; bristles large and hairs very few; between the rows of dorso-centrals are about ten hairs arranged in two rows, very distinct; scutellum with two pairs of bristles, otherwise bare; mesopleura with one bristle and several hairs at the posterior edge, just below the base of the wing; pteropleura bare; sternopleura with two bristles and a few hairs; halteres light yellow.

Abdomen cinereous, concolorous with thorax; hypopygium small, with some indistinct grasping organs turned forward underneath.

Coxæ and femora blackish, tibiæ and tarsi yellow, the latter but little infuscated towards the tip; pulvilli moderately large.

Wings almost hyaline, the veins yellowish, cross-veins not infuscated; third vein ending precisely in the apex; bristles of the costa small and few.

One male. Aldrich: Pacific Grove, California, May 8, 1906, collected at the seashore a little above high-tide line, where a small seepage of fresh water made a streak of verdure.

EXPLANATION OF PLATE IV.

The parts are variously magnified: No. 1 is one of the smallest of the family; No. 3 above the average. The veins of the wings are not generally very black in life, making the actual appearance quite different from the drawing; this is especially true of No. 7.

Fig. 1.—*Siligo oregona*, new genus and species.

" 2.—*Porseus johnsoni*, new genus and species.

" 3.—*Eccoptomera americana*, new species.

" 4.—*Anorostoma maculata*, new species.

" 5.—*Anorostoma maculata*, new species.

" 6.—*Helomyza limbata*, Thomson.

" 7.—*Siligo oregona*, new genus and species.

" 8.—*Cyrtonotum helvum*, Loew.

" 9.—*Cyrtonotum helvum*, Loew.

Figs. 8 and 9 are added for comparison, but the species does not belong to this family. The second basal cell is confluent with the discal, as figured, in many cases, but is sometimes distinct; the second and third basals are very small. The anterior fronto-orbital curves strongly forward.

